

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

1. (Currently amended): A protective disk for protecting a semiconductor wafer during processing, comprising:

an adhesive layer including a first surface region configured to adhere to the semiconductor wafer, the adhesive layer including a second surface region opposite to the first surface region, the adhesive layer comprising a high molecular weight polymer, wherein the polymer is soluble in one of the group consisting of: a mildly alkaline solution and a mildly acidic solution; and

a support layer coupled to the second surface region of the adhesive layer, the support layer being configured to support the adhesive layer and the entire semiconductor wafer during processing.

2-3. (Canceled).

4. (Previously presented): The protective disk of claim 1, wherein the support layer comprises a polymer and at least one of the group consisting of:

a filler; and
a reinforcement.

5. (Previously presented): The protective disk of claim 4, wherein the filler comprises one or more of the group consisting of:

alkali oxides;
alkali salts;
transition metal oxides;
transition metal salts;

alkaline earth oxides; and
alkaline earth salts.

6. (Previously presented): The protective disk of claim 5, wherein the percentage by weight of filler in the support layer ranges from 1% to 95%.

7. (Canceled).

8. (Previously presented): The protective disk of claim 4, wherein the reinforcement is at least one of the group consisting of:

a fiber;
a matting;
a platelet; and
a whisker;

and, wherein the reinforcement comprises at least one of the group of materials consisting of:

a glass;
a ceramic;
a carbon; and
a polymer.

9. (Previously presented): The protective disk of claim 1, wherein the protective disk is substantially the same diameter as the semiconductor wafer.

10. (Previously presented): The protective disk of claim 1, wherein thickness of the protective disk is approximately 600 μ m.

11. (Previously presented): The protective disk of claim 1, wherein the adhesive layer has sufficient thickness to conform to topographical features of the semiconductor wafer.

12. (Previously presented): The protective disk of claim 1, wherein the protective disk provides support to edge bevel of the semiconductor wafer.

13. (Previously presented): The protective disk of claim 1, further comprising:
an intermediate layer located between the adhesive layer and the support layer
configured to provide additional properties to the protective disk.

14. (Previously presented): The protective disk of claim 13, wherein the
intermediate layer is configured to provide at least one of the group consisting of:
ability to conform to topographical features of the semiconductor wafer; and
enhanced strength of the protective disk.

15. (Previously presented): The protective disk of claim 1, wherein bulk modulus
of the protective disk is sufficient to provide strength and stiffness to wafer/disk composite and
to provide sufficient suppleness and toughness to prevent brittle failure of the wafer/disk
composite.

16. (Previously presented): The protective disk of claim 1, wherein the protective
disk is sufficiently waterproof to endure a back-grinding process.

17. (Previously presented): The protective disk of claim 1, wherein the protective
disk withstands chemistries used for post-grind stress relief.

18 (Previously presented): The protective disk of claim 1, wherein the coefficient
of thermal expansion (CTE) of the protective disk is tailored to correspond to the CTE of the
semiconductor wafer.

19 (Previously presented): The protective disk of claim 1, wherein the protective
disk is removable by contact with one of the group consisting of:

- a mildly alkaline solution; and
- a mildly acidic solution.

20 (Previously presented): The protective disk of claim 19, wherein the mildly
alkaline solution is selected from the group consisting of:

- hydroxides of ammonium; and

hydroxides of potassium.

21-35. (Canceled).

36 (Previously presented): The protective disk of claim 1 wherein the polymer includes a functional group selected to impart solubility to the polymer in the mildly alkaline solution or the mildly acidic solution.

37 (New) A disposable disk for protecting a semiconductor wafer during a process, the disposable disk comprising:

a substantially circular plate configured for supporting an entire surface of the semiconductor wafer, the circular plate being characterized by a plate diameter substantially the same as the wafer diameter of the semiconductor wafer, the circular plate comprising a polymer material removable by contact with a cleaning solution; and

an adhesive layer coupled to the circular plate, the adhesive layer having sufficient width to accommodate the diameter of the semiconductor wafer for attaching the circular plate to an entire surface of the semiconductor wafer, the adhesive layer being removable by contact with the cleaning solution.

38 (New) The disposable disk as recited in claim 37, wherein the cleaning solution is a mildly alkaline solution.

39 (New) The disposable disk as recited in claim 37, wherein the cleaning solution is a mildly acidic solution.

40 (New) The disposable disk as recited in claim 37, wherein the circular plate and the adhesive layer include polymer functional groups that can withstand strong acids for post-grind stress relief and are removable by contact with a mildly alkaline solution.

41 (New) The disposable disk as recited in claim 37, wherein the disposable disk is made from a process comprising:

joining an adhesive layer and a support layer by lamination; and

forming the disposable disk by die stamping.

42 (New) The protective disk of claim 37, wherein the adhesive layer has sufficient thickness to conform to topographical features of the device side of the semiconductor wafer.

43 (New) The disposable disk as recited in claim 37, wherein the cleaning solution is a hydroxide of ammonium.

44 (New) The disposable disk as recited in claim 37, wherein the cleaning solution is a hydroxide of potassium.

45 (New) A disposable disk for protecting a substrate during a grinding process, the disposable disk comprising:

a substantially circular plate comprising a continuous member extending the entirety of a surface of the substrate, the circular plate being characterized by a plate diameter substantially the same as a substrate diameter of the substrate, the circular plate being removable by contact with a cleaning solution; and

an adhesive layer coupled to the circular plate, the adhesive layer having sufficient width to accommodate the diameter of the substrate for attaching the circular plate to an entire surface of the substrate, the adhesive layer being removable by contact with the cleaning solution.

46 (New) The disposable disk as recited in claim 45, wherein the disposable disk provides support to edge bevel of the substrate.